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| 09/855,152 | 05/14/2001 | Fujio Tanaka | 1217-010740 | 1112 |

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09/11/2003

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EXAMINER

LANGEL, WAYNE A

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

855152

Applicant(s)

Tanaka et al

Examiner

Langel

Group Art Unit

1754

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 7-23-03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-37 is/are pending in the application.
- Of the above claim(s) ~~1-18~~ 7-18 and 25-37 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-6 and 19-24 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 3 and 4
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit 1754

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 19-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Millar et al. in view of European 0245940. Millar et al. disclose a process for producing a purified aqueous hydrogen peroxide solution, comprising passing an aqueous hydrogen peroxide solution containing impurities through an ion exchange resin via a feed pump. (See the Abstract and column 8, lines 13-36.) The difference between the process and apparatus disclosed by Millar et al., and that recited in applicant's claims, is that Millar et al. do not disclose a flow sensor capable of sensing a flow rate of the charged aqueous hydrogen peroxide solution being fed to the purifier tower and wherein the output of the feed pump is controlled in cooperation with a flow sensor so as to maintain the flow of charged aqueous hydrogen peroxide solution at a constant rate. European '940 discloses a method for the separation of at least one material from a solution which comprises flowing the solution through a

Art Unit 1754

separation means such as an ion-exchange resin containing at least one sorbent which is selective for material in the solution, wherein the flow of the solution through the separation means is controlled using valves under computer or electronic control. (See the Abstract and column 4, lines 29-39.) European '940 implies at column 1, lines 19-24 that the process would result in even flow rates within the system. It would be prima facie obvious from European '940 to modify the process and apparatus of Millar et al. by providing a flow sensor capable of sensing a flow rate of the charged aqueous hydrogen peroxide solution being fed to the purifier tower of Millar et al. and to control the output of the feed pump in cooperation with the flow sensor so as to result in a constant rate of charged aqueous-peroxide solution, since European '940 suggests at column 1, lines 19-24 that even flow rates are necessary to provide complete separation in a separation process, and imply that the process disclosed therein would provide such complete separation. One of ordinary skill in the art would be motivated to provide complete separation in the process of Millar et al., since Millar et al. teach at column 1, lines 4-35 that aqueous hydrogen peroxide used in the manufacture of semiconductors, integrated circuits and the like and in related electronics industries need to be very pure. Regarding claim 2, it would be further obvious to control the output of the feed pump of Millar et al. by means

Art Unit 1754

of an inverter, since one of ordinary skill in the art would appreciate that any known or suitable mechanism could be used for controlling such output. Regarding claims 3, 4 and 19-21, it would be within the skill of one of ordinary skill in the art to determine a suitable space velocity and variation of flow rate for the aqueous hydrogen peroxide solution of Millar et al. Accordingly the space velocity or flow rate variation recited in these claims would be prima facie obvious. Regarding claims 5 and 22-24, it is well-known that fluororesin is conventionally employed to contain aqueous hydrogen peroxide solutions to inhibit decomposition and to prevent further contamination of the solution. Accordingly it would be further obvious to modify the process of Millar et al. to assure that any part brought into contact with the aqueous hydrogen peroxide solution is composed of a fluororesin.

Claim 6 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is indefinite in constituting an apparatus claim which includes a method limitation. The recitation of "through which a charged aqueous hydrogen peroxide solution containing impurities is passed so as to effect contact thereof with the ion exchange resin, chelate resin or adsorption resin" is a method limitation. It is well-settled that method

Art Unit 1754

limitations render the scope of an apparatus claim vague and indefinite, since it is not clear whether the claim requires such method limitation, or whether the metes and bounds of the claim are limited to the specific structural limitations which are recited.

The other references are made of record for disclosing various methods and apparatus for producing purified aqueous hydrogen peroxide solutions by ion exchange.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

September 4, 2003

Wayne A. Langel
WAYNE A. LANGEL
PRIMARY EXAMINER